

Claims

1. A dose indicator (A) for a fluid product dispensing device (B), including at least one rotary counting means (10) capable of being rotated, said at least one counting means including indicating means (15), showing the number of doses dispensed or remaining to be dispensed, said at least one counting means being actuated by an actuating member (35) which itself is actuated by a transmission element (34) suitable to cooperate with a part (54) of said dispensing device (B) at each actuation of the latter, characterised in that said dose indicator includes adaptation means (134) located between said transmission element (34) and said part (54) of said dispensing device (B), said adaptation means (134) being movable and/or deformable in order to accurately predetermine, during assembly of the dispensing device (B), the distance at rest between said transmission element (34) and said part (54) of dispensing device (B).

2. An indicator according to claim 1, in which said adaptation means (34) includes a deformable and/or movable element attached to said transmission element (34), such as a peg (134), the minimum force necessary to move and/or deform said element (134) being greater than the force required to actuate the indicator, where said element is deformed and/or moved only during assembly of the dispensing device (B).

3. An indicator according to claim 2, in which said at least one rotary counting means includes a rotary counting wheel (10) fitted with teeth (19), said teeth (19) cooperating with actuating means (31, 34, 35) that are suitable to turn said rotary wheel (10),

where said actuating means include a flexible tab (31) that includes a first flexible tab part (32) and a second flexible tab part (33) which is more rigid than the first tab part (32), the first tab part (32) bearing an actuating tooth (35) designed to cooperate with the teeth (19) of said rotary counting wheel (10) at each actuation of the device, and the second tab part (33) supporting the transmission element (34) suitable to cooperate with said fluid product dispensing device (B) at each actuation of the latter, said flexible tab (31) being attached to a ring (30) surrounding said teeth (19), with said flexible tab (31) cooperating with said teeth (19) each time a dose is dispensed.

15 4. An indicator according to claim 3, in which said ring (30) includes non-return means (36, 37), preventing said rotary disk (10) from turning in the direction opposite to that induced by said flexible tab (31).

20 5. An indicator according to claim 3 or 4, in which said ring (30) includes a stop (39) suitable to cooperate with a blocking element (38) attached to said flexible tab (31) so as to limit the rotation of said rotary counting wheel (10).

25 6. An indicator according to claim 5, in which the second, more rigid tab part (33) is designed to flex from the moment when the blocking element (38) is blocked by the stop means (39) of the ring (30).

30 7. An indicator according to any of claims 3 to 6, in which the rotation of the rotary counting wheel (10) is effected at the beginning of the actuating stroke of the fluid product dispensing device (B), with the flexing of the second, more rigid tab part (33)

allowing continuation of said actuating stroke of the fluid product dispensing device (B) for its full distance, despite the blocking of the blocking element (38) by the stop means (39).

5 8. An indicator according to any of the preceding claims, in which said transmission element (34) is a shoulder attached to a flexible tab (31), and cooperating with a part (54) of the fluid product dispensing device (B) which is movable during its
10 actuation.

9. An indicator according to any of the preceding claims, in which the indicator (A) includes a linearly movable member (20) which can be moved linearly, with the indicating means (15) cooperating with a viewing 15 opening (25) provided in said linearly movable member (20), where said at least one rotary counting means includes a rotary counting wheel (10) with a hollow profile (18) that cooperates with a projection (28) of said linearly movable member (20), the shape of said 20 hollow profile (18) being such that at least some rotations of said rotary counting wheel (10) result in a linear motion of said linearly movable member (20), changing the position of said linearly movable member (20) in relation to said counting wheel (10).

25 10. An indicator according to claim 9, in which said rotary counting wheel (10) and said linearly movable member (20) are placed in cover (40) that includes a viewing window (45) which cooperates with the viewing opening (25) of the linearly movable member 30 (20).

11. An indicator according to claim 10, in which the rotary counting wheel (10), the linearly movable member (20), the actuating means (31, 34, 35) and the

cover (40) form a unit which can be mounted in a fluid product dispensing device (B).

12. An indicator according to any of claims 9 to 11, in which said indicating means (15) follow said 5 hollow profile at least partially (18).

13. An indicator according to any of claims 9 to 12, in which the shape of said hollow profile (18) is irregular so that dose indication is progressive.

14. An indicator according to any of claims 9 to 10 13, in which said hollow profile (18) is at least partially in the shape of a spiral.

15. An indicator according to any of the preceding claims, in which said indicating means (15) are numbers and/or symbols.

16. An indicator according to any of the preceding claims, in which said indicator includes amplification means, with said amplification means converting linear movement (a) of the transmission element (34) into rotary movement of the actuating member (35), the 20 projection in linear motion of said rotary movement being $\alpha.a$, where $\alpha > 1$.

17. An indicator according to claim 2, in which, after assembly of the dispensing device, and in the 25 rest position, the peg (134) is located at a distance "b" from the part (54) of the dispensing device (B) intended to actuate the indicator (A).

18. A fluid product dispensing device (B) that includes a product reservoir (51) and a dispensing 30 member (52), such as a pump or a valve mounted on said reservoir (51), characterised in that it includes a dose indicator (A) according to any of the preceding claims.

19. A device according to claim 18, in which the dose indicator (A) is actuated by a part (54) of the dispensing device (B) which is moved during the actuation of the device (B), and which cooperates with
5 the transmission element (34) of said indicator (A).